

# HOLDEN MINE REMEDIATION PROJECT

## Construction Report

Rain or shine, implementation and construction continues at the Holden Mine remediation site. Over the last few weeks the site has received periodic rain from thunder and lightning storms and is experiencing 90 degree temperatures. The Railroad Creek realignment, barrier wall platform, quarry work, building demolition, and underground mine portal work continues as the temporary Copper Creek diversion is nearly complete.



Super sacks along Railroad Creek where the barrier wall platform is being constructed

## Current Construction Activities:

**Copper Creek:** Copper Creek flows between Tailings Pile 1 and Tailings Pile 2 where it then joins Railroad Creek. The creek is being realigned to remove the risk of tailings erosion into the creek and to create a better angle where it flows into Railroad Creek. Water from the current Copper Creek stream bed will be diverted through a culvert into a lined channel so the contractors can prepare the existing channel area for the final configuration next year.

**Quarry Blasting:** Blasting at the East Ten Mile Quarry occurs regularly throughout the summer. Rock blasted at the quarry is hauled to the Lower West Ten Mile Borrow area for processing or stockpiling. The riprap is used for bank protection along the new alignments of Railroad and Copper Creeks. As a public safety measure, remediation personnel are staffing the Ten Mile Falls and Monkey Bear Falls trailheads and trail junctions to keep hikers at a safe distance from the area when blasting occurs.

**Mine Portals:** To capture water draining from the underground mine workings, crews have completed constructing concrete bulkheads in the two lowest portals. Recent underground construction activities have

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consisted of completing perimeter pressure grouting at the Main Portal bulkhead, grading a path for water drainage out of the Main Portal, and placing permanent drain line. Grouting work has been completed at the Ventilator Portal.

**Railroad Creek Realignment:** A section of the Railroad Creek channel is being relocated to allow for future construction of a barrier wall at the base of the tailings piles. The Railroad Creek realignment route has been cleared of slash and timber in preparation for creating a new pathway for the creek. The excavation has encountered a number of large boulders in the relocation pathway (see picture below). Crews have installed a complex system of dewatering wells along the outer perimeter of the realignment path. These wells drain and divert groundwater from the area surrounding the creek realignment to allow stream construction to occur in a dry environment, and in a safe and accessible manner.

**Tailings Pile Grading:** Crews have completed the first stage of grading Tailings Pile 1. Tailings material was moved to Tailings Pile 3 to allow for the barrier wall platform construction and investigation drilling.

**Barrier Wall:** The barrier wall platform has been completed along Tailings Pile 1 up to the junction of Copper Creek and Railroad Creek. The barrier wall platform at the base of Tailings Pile 2 is under construction. A series of exploratory drilling along the barrier wall platform were done to investigate the hydraulic properties of the glacial till and bedrock depth for the below grade barrier wall design.

A super sack wall (very large bags filled with sand) is being placed in Railroad Creek to divert water away from the tailings pile and allow for excavation of buried, contaminated material and platform construction at the base of the tailings pile in preparation for the barrier wall construction. The barrier wall will extend to the western half of Tailing Pile 2 once the creek has been relocated.



Large boulders encountered during excavation of Railroad Creek realignment



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